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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/634,283

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Wai Cheung

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06/29/2005

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EXAMINER

LE, UYEN CHAU N

ART UNIT

PAPER NUMBER

2876

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

E)✓

Office Action Summary	Application No.	Applicant(s)	
	10/634,283	CHEUNG ET AL.	
	Examiner	Art Unit	
	Uyen-Chau N. Le	2876	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 22-25 is/are allowed.
- 6) ☒ Claim(s) 1-21, 26, 27 and 29 is/are rejected.
- 7) ☐ Claim(s) 28 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Objections

2. Claim 28 is objected to because of the following informalities:
Re claim 28, line 2: Substitutes "top boarder" with -- top border --.
Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-2 and 11-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Lopresti et al (US 5,862,270).

Re claims 1-2 and 11-15: Lopresti et al discloses a method for encoding a 2D symbol, the method comprising converting binary data into a first bit-stream of codeword data; calculating a set of error correction code-words from the first bit-stream based on a predefined error correction level; combining the first bit-stream and the set

of error correction code words into a second bit-stream of codeword data; dividing the second bit-stream into a set of equally sized data segments; adding a set of control information code words into each of the data segments; adding a data segment divider between the data segments; providing a top border and a bottom border, a left border and a right border circumscribing the data segments such that the 2D symbol is so created; re-arranging at least two of the second bit-stream in an interleaved order (figs. 3-6; col. 6, line 29 through col. 8, line 64).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lopresti et al in view of Reichenbach (US 20030009725). The teachings of Lopresti et al have been discussed above.

Re claim 3: Lopresti et al has been discussed above but is silent with respect to a masking operation on the second bit-stream with a predefined mask to avoid the bars concentrated in a particular area.

Reichenbach teaches a masking operation to mask to correct data defective bits (p. 1, paragraph [0002]).

It would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to incorporate the masking operation of Reichenbach into the system of Lopresti et al in order to provide Lopresti et al with a capability to correct data defective bits/bars concentration, thus provide a more accurate system and therefore an obvious expedient.

8. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lopresti et al in view of Klancnik et al (US 5329105 A). The teachings of Lopresti et al have been discussed above.

Re claims 4-5: Lopresti et al has been discussed above but is silent with respect to the top border includes at least one start code pattern and one terminator code pattern, and the bottom border includes at least one end code pattern and one terminator code pattern to facilitate detection of an orientation of the 2D symbol.

Klancnik et al teaches a 2D barcode 1002 includes a start and a stop patterns having terminator code patterns (fig. 10; col. 19, lines 2-45).

It would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to incorporate the start and stop patterns including terminator code patterns of Klancnik et al into the system as taught by Lopresti et al in order to provide Lopresti et al with a more accurate system wherein the data can be obtained from the exact location of the data field (i.e., between the start code and the stop code), preventing the data from being read from a wrong coded area, and therefore an obvious expedient.

9. Claims 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lopresti et al in view of Sant'Anselmo et al (US 5,612,524). The teachings of Lopresti et al have been discussed above.

Re claims 6-10: Lopresti et al has been discussed above but is silent with respect to the left border and the right border are a pair of identical positioning blocks including alternating bars and spaces according to a predefined pattern.

Sant'Anselmo et al teaches a data area of a 2D barcode 10 is circumscribed by the top, bottom, left and right borders (figs. 6-7).

It would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to incorporate the left and right borders including positioning blocks of Sant'Anselmo et al into the system as taught by Lopresti et al in order to provide Lopresti et al with a more accurate and time consuming system wherein an exact orientation of the code can be determined readily upon detection of the code's borders, and therefore an obvious expedient.

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10. Claims 16-17 and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (US 5,477,042) in view of Sant'Anselmo et al. The teachings of Sant'Anselmo et al have been discussed above.

Re claims 16-17 and 26-27: Wang discloses a method for decoding a 2D symbol including a plurality of bars and spaces in a data area representing a bit-stream of codeword from a binary data file, the data area circumscribed by a top border, a bottom border, a plurality of data segment divider dividing the bit-stream data area into a plurality of data segments, the method comprising scanning the 2D symbol in entirety to produce a stored image; searching in the stored image for the top border having a start code pattern and the bottom border having an end code pattern; determining a horizontal axis and a vertical axis of the symbol image based on the start code pattern and the end code pattern; calculating a scan line angle between a scan line and the horizontal axis of the stored image; determining a print resolution from the stored image; locating the plurality of data segment dividers in the stored image; retrieving a set of control information from the data segments; and converting the bit-stream of code word data into original binary data file (figs. 3-8; col. 5, line 4 through col. 10, line 39).

Wang is silent with respect to a left border and a right border circumscribed the data area with the top border and the bottom border, wherein the left border and the right border are a pair of identical positioning blocks including alternating bars and spaces according to a predefined pattern, respectively.

Sant'Anselmo et al teaches a data area of a 2D barcode 10 is circumscribed by the top, bottom, left and right borders (figs. 6-7).

It would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to incorporate the left and right borders including positioning blocks of Sant'Anselmo et al into the system as taught by Wang in order to provide Wang with a more accurate and time consuming system wherein an exact orientation of the code can be determined readily upon detection of the code's borders, and therefore an obvious expedient.

11. Claims 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang in view of Reichenbach (US 20030009725). The teachings of Wang have been discussed above.

Re claim 3: Wang has been discussed above but is silent with respect to a masking operation on the second bit-stream with a predefined mask to avoid the bars concentrated in a particular area.

Reichenbach teaches a masking operation to mask to correct data defective bits (p. 1, paragraph [0002]).

It would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to incorporate the masking operation of Reichenbach into the system of Wang in order to provide Wang with a capability to correct data defective bits/bars concentration, thus provide a more accurate system and therefore an obvious expedient.

Allowable Subject Matter

12. Claims 22-25 are allowed.

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13. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of records to Lopresti et al, Klancnik et al, Sant'Anselmo et al, Wang, Reichenbach and all other cited references, taken alone or in combination, fails to teach or fairly suggest the specific structure or the method for decoding a 2D symbol including a plurality of bars and spaces in a data area representing a bit-stream of codeword data from a binary data file, the data are circumscribed by a top border, a bottom border, a left other, and a right border, a plurality of data segment dividers dividing the bit-stream data area into a plurality of data segments, the method comprising, among other things, switching to the decoding method for the graphic symbol image in entirety if the first data segment is out of sequence, or the bit-stream data area in the first data segment is stored in an interleaved order, retrieving the plurality of codeword information in the bit-stream data area using the coordinates of the data elements in the current data segment, restoring a first part of the first bit-stream of codeword data for the current data segment as set forth in the claims combination.

14. Claim 28 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

15. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of records to Lopresti et al, Klancnik et al, Sant'Anselmo et al, Wang, Reichenbach and all other cited references, taken alone or in combination, fails

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to teach or fairly suggest the specific structure or the method of a 2D symbol embedding information readable by a scanning device to recover the information comprising, among other things, the start code pattern of the top border and the end code pattern of the bottom border includes eight alternated bars and spaces, the start code pattern has width ratio of 3:2:1:1:1:2:2:3 modules and the end code pattern has width ratio of 3:1:2:3:2:2:1:1 modules as set forth in the claims combination.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The patents to Chandler et al (US 4896029 A); Adachi (US 5378881 A); Kubo (US 5489769 A); Shellhammer et al (US 5523552 A); Ma et al (US 6082619 A); Lopresti et al (US 6115508 A); Ma (US 6565003 B1); Cheung et al (US 6802450 B2); Ma et al (GB 2388230 A); Jeun (JP 2004070960 A); Gormish et al (US 5337362 A); He et al (US 20020088865 A1); Wang (US 5243655 A); Adachi et al (US 5369265 A); Roustaei et al (US 20020044689 A1); Keech et al (US 6456798 B1); Longacre, Jr. et al (US 5591956 A); and Sant'Anselmo et al (US 4924078 A) are cited as of interest and illustrate a similar structure to methods and systems for encoding and decoding data in 2D symbology.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Uyen-Chau N. Le whose telephone number is 571-272-2397. The examiner can normally be reached on Mon-Fri. 5:30AM-2:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on 571-272-2398. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Uyen-Chau N. Le
June 23, 2005